

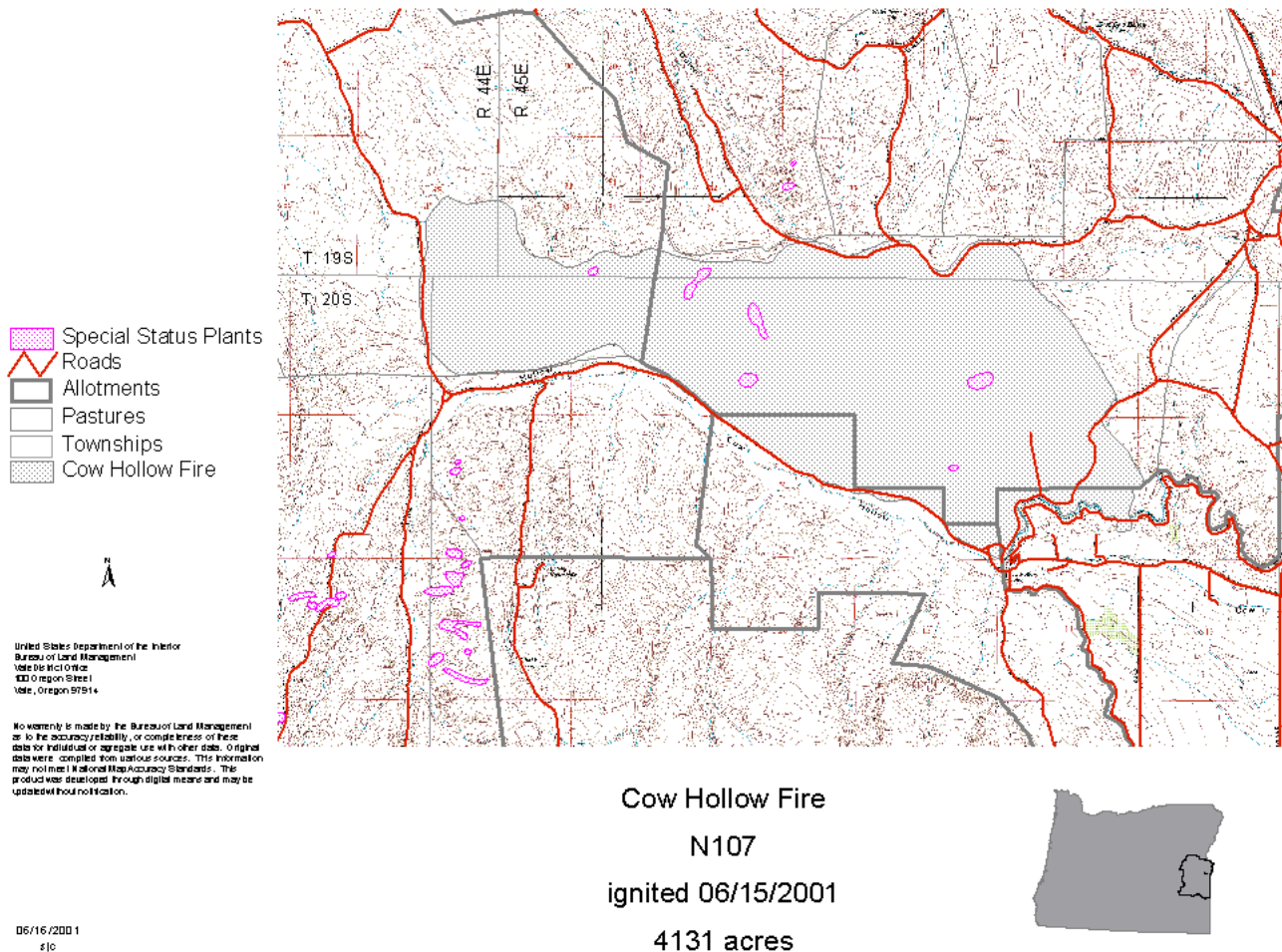
Vale District Bureau of Land Management  
Cow Hollow Emergency Stabilization and Rehabilitation Plan N107  
Environmental Assessment  
EA No. OR-030-01-011

I. PURPOSE AND NEED

A. Background

A human caused fire originating on private land in T.20S., R.45E., W.M. Section 11 during the afternoon of June 15, 2001, spread to public land and was suppressed by federal firefighters as the Cow Hollow Fire (N 107) (figure 1). It burned a total of 4,131 acres of which approximately 773 acres are private, 24 acres are under withdrawal to the Bureau of Reclamation, and 3,334 acres are public domain in the Malheur Resource Area of the Vale Bureau of Land Management District. Containment was achieved at 1230 on June 16 with control at 1700 on June 17. One dozer, two graders, a number of engines, one helicopter, a water tender, and air tankers were used during suppression activities. Approximately 12 miles of improved road and bladed two-tracks were used for control lines, in addition to disced line on private and public land adjacent to roads and fences on the west flank of the fire. Approximately three miles of additional line on the east flank of the fire was disced adjacent to existing roads and cross country on public land without authorization from BLM. The firelines and roads used for control were reshaped and smoothed to the extent possible before heavy equipment left the scene of the fire. Due to dry soil and extremely dusty conditions, there is a need to delay seeding of roads and bladed line used for fire suppression activities and rehabilitation work on access roads until sufficient moisture is available during the fall of 2001.

Though a portion of the area burned was dominated by native sagebrush/bunchgrass vegetation communities prior to the fire, the majority of the burned area, including areas adjacent to livestock water sources and other areas of previous disturbance, was dominated by annual herbaceous species. Native communities contained Wyoming big sagebrush (*Artemisia tridentata ssp. wyomingensis*), rabbitbrush (*Chrysothamnus sp.*), bluebunch wheatgrass (*Pseudoroegneria spicata*), Thurber's needlegrass (*Stipa thurberiana*), and Sandberg bluegrass (*Poa secunda*). Sandy knolls in the western portion of the fire were dominated by needle-and-thread grass (*Stipa comata*) and Indian ricegrass (*Oryzopsis hymenoides*). A plant species listed by the State of Oregon as endangered, Mulford's milkvetch (*Astragalus mulfordiae*) also grows in these sandy habitats. Cheatgrass (*Bromus tectorum*) was dispersed through most vegetation communities. Rush skeletonweed (*Chondrilla juncea*), an invasive perennial noxious weed has gained a foot-hold within and adjacent to the boundary of the fire, though control efforts have been initiated in recent years. Scotch thistle (*Onopordum acanthium*), an aggressive biennial, dominates small acreage at a number of locations in and adjacent to the fire boundary. It is also present as a minor component throughout the burned area. Where native perennial herbaceous species were limited or devoid in the understory of sagebrush/ grassland communities, the shrub community provided competition with annual species for available moisture and soil nutrients. Sagebrush steppe vegetation communities provided year-long or winter habitat for a number of wildlife species including big game animals, upland game species, and other sagebrush dependent species.



## B. Purpose and Need

Interagency guidance and BLM policy as stated in H-1742 version 1.0 found at <http://fire.r9.fws.gov/ifcc/Esr/handbook/default.htm> provides for emergency stabilization and rehabilitation where fire has an adverse impact on vegetation, soils, and watersheds and also to minimize other adverse changes to the extent practicable, including the following:

- ! loss of vegetative cover for watershed protection;
- ! loss of soil and on-site productivity;
- ! loss of water control and deterioration of water quality;
- ! invasion of burned area by flammable annual species which increase the potential for repeated wildfire.

The area burned by Cow Hollow Fire is in need of stabilization and rehabilitation to minimize soil movement, preserve on-site productivity, reduce the invasion and increased dominance of undesirable

flammable annual plants and reduce the potential for increased dominance of existing noxious weed as well as the invasion by new undesirable species. These objectives can be met by protecting residual native vegetation communities during a period necessary for recovery of health and vigor and establishing desirable perennial plant cover to replace annual vegetation communities to the extent possible. This environmental assessment analyzes the benefits and risks of implementing rehabilitation actions to establish native perennial vegetation cover as compared to establishment of desirable nonnative perennial species, and also includes a limited rehabilitation and a no action alternative.

## II. CONSISTENCY WITH LAND USE PLANS

In addition to other National Environmental Policy Act requirements, this environmental assessment was completed to ensure that treatments identified in the Emergency Stabilization and Rehabilitation Plan are consistent with the applicable land use plan objectives and decisions. Seeding and planting of grass, forb and shrub species as proposed in the preferred alternative is consistent with the following recommendations of the Northern Malheur Management Framework Plan dated March 14, 1983.

- SWA 3.2/4.1 Implement a vegetation manipulation program on approximately 80,000 acres of low-elevation (below 3,000 feet) lacustrine sediment material on the public land by reseeding an adapted perennial grass that will help protect these soils from wind and water actions and will also extend the wildfire resistance of the plant communities into the growing season.
- W/L 1.1 Seed or plant seedlings of suitable shrub and/or tree species on select sites within areas designated “C” on the Habitat Opportunity overlay. Species under consideration should include juniper, curl leaf mountain mahogany, aspen, cottonwood, willow, choke and bitter cherry. Livestock grazing of the treated areas should be prohibited for a minimum of two growing seasons and then allow spring season use there after.
- W/L 10.1 Within areas marked “F” on overlay, increase the survival of palatable browse species reproduction by 20% from the existing 5% (estimated) by 1990 through the initiation of livestock grazing systems utilizing “prescription” grazing toward a vegetative objective. Coordinated AMP/HMP planning will be required.
- W/L 10/2 Future seedings should include a variety of grasses, forbs, and browse (shrub) species in the seeding mixture. A mixture of approximately ½ grasses, ¼ forbs, and ¼ browse - each being represented by from 4 to 6 species - is considered ideal.
- W/L 10.4 Wild fire should be aggressively suppressed in critical browse and/or cover habitats.
- W/L 11.4 Attain and/or maintain a vegetative composition of 55% grasses, 25% forbs, and 20% shrubs.

Neither the North Harper Allotment Management Plan implemented in 1982 nor the Freezeout Allotment Management Plan revised in 1989 provide management direction for seeding and establishment of shrub species though do identify management objectives to improve or maintain upland ecological conditions within native pastures.

Fence reconstruction and temporary fencing to ensure temporary exclusion of livestock from burned areas pending establishment of seed species and recovery of residual vegetation is also consistent with the Northern Malheur Management Framework Plan and affected activity plans.

### III. DESCRIPTION OF ALTERNATIVES AND THE PROPOSED ACTION

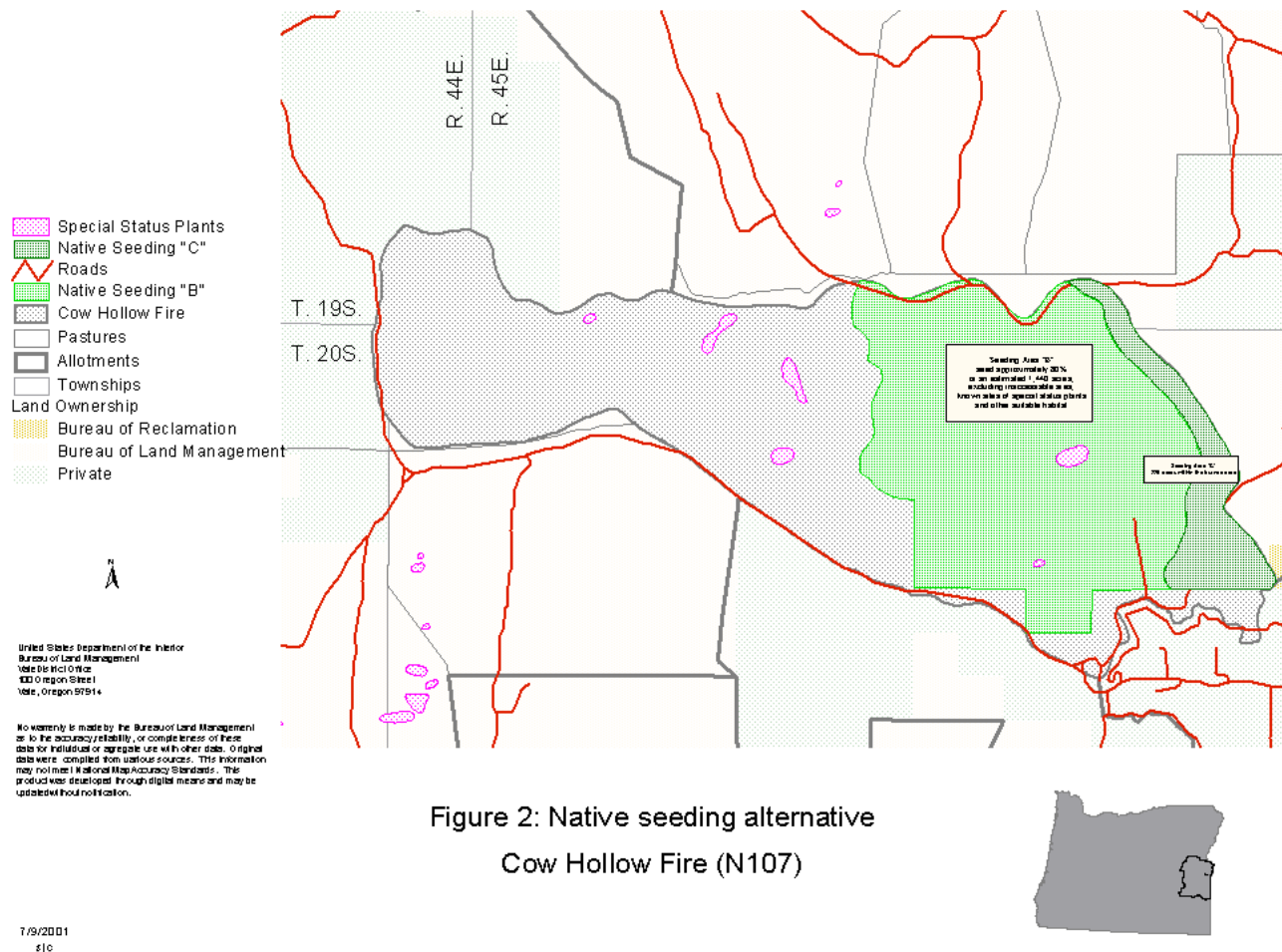
Alternatives considered and analyzed include a native seeding alternative, a nonnative seeding alternative, a limited rehabilitation alternative, a no action alternative, and the proposed action. Herbicide treatment of burned areas with herbicides such as Oust or Plateau to control competition from annual species during germination and establishment of perennial seeded species was considered though not analyzed since use of Oust is not consistent with an injunction on the use of herbicides on public lands in Oregon and Washington and Plateau is not licensed for use in rangeland systems. A summary of treatments analyzed by alternative is presented in table 1.

Table 1: Summarized treatments by alternative

<b>Action \ Alternative</b>	<b>Native Seeding</b>	<b>Nonnative Seeding</b>	<b>Limited Rehab</b>	<b>No Action</b>	<b>Proposed Action</b>
Native seeding (acres)*	1,660	0	0	0	1,440
Nonnative seeding (acres)*	0	1,900	0	0	660
Seedling shrub planting (acres)*	400	0	0	0	400
Aerial sagebrush seeding (acres)*	3,334	0	0	0	3,334
Cultipacking sagebrush seeding (acres)*	400	0	0	0	400
Fence reconstruction (miles)*	1.0	1.0	1.0	0	1.0
Temporary fencing (miles)*	0	5	0	0	2.5
Temporary livestock exclusion (acres)*	4,567	3,321	4,567	0	2,865
Fire Line/Road Seeding (miles)	4	4	0	0	4
Monitoring*	Yes	Yes	Yes	No	Yes
* Actions for which Emergency Stabilization and Rehabilitation funding is requested (data are public acreage only).					

#### A. Native Seeding Alternative

The native seeding alternative would include seeding approximately 1,660 acres of public land in the eastern portion of the burned area, as depicted in seeding areas B and C on figure 2, using rangeland drills during the fall of 2001 or spring of 2002. Those areas seeded would include flat and moderately sloped topography and areas outside of habitat with potential to support Mulford's milkvetch. The native mixture would include cultivars of bluebunch wheatgrass (*Pseudorogneria spicata*), basin wildrye (*Leymus cinereus*), Indian ricegrass, western wheatgrass (*Pascopyrum smithii*), native forbs, bitterbrush (*Purshia tridentata*), and/or fourwing saltbush (*Article canescens*) at a drilling rate of approximately 9 pounds per acre (35 seeds per square foot). All seed when mixed would be treated



with organic seed coating to enhance germination success and seedling survival. The remaining 1698 acres of public and 773 acres of private land within the fire boundary would not be seeded due to steepness of slopes, its location within islands which did not burn, or unacceptable impacts to special status plant habitat.

All public land acres of the burned area would be broadcast seeded, on completion of drilling, with local Wyoming big sagebrush at a rate of 0.1 pounds pure live seed (pls) per acre (approximately 1 pound per acre bulk). Approximately 400 acres of accessible portions of the sagebrush seeding would be cultipacked to better ensure seed contact with the soil during germination and approximately 400 acres of the burned area would be planted with 1-0 seedlings of additional shrub species including bitterbrush, four-wing saltbush, shadscale, and/or sagebrush to provide nurse stock for future colonization of the site by these shrub species. Shrub seedlings would be planted at a rate of approximately 50 seedlings per acre as available in the spring of 2002 and 2003 utilizing emergency fire rehabilitation funds and in later years as other funding sources are found.

Approximately 4 miles of road bladed or disced during suppression actions, 2.5 of which is between the Vale Dump and the east fire boundary and 1.5 of which is adjacent to the division fence between North Harper and Freezeout allotments to the north of the fire boundary, would also be drill seeded with the native species mixture.

Due to the location of the 4,131 acre fire within the West Canal Pasture (3,587 public land acres) of North Harper Allotment (00402) and also within the Russell Custodial Pasture (980 public land acres) of Freezeout Allotment (10404), no temporary fencing would be proposed to exclude livestock grazing from fire impacted vegetation communities. West Canal and Russell Custodial pastures would be closed to livestock grazing through July 15, 2003 and until monitoring indicates that desired residual perennial vegetation has recovered to levels that are adequate to support and protect upland function and that seeded species have become established.

A number of fence locations which were cut during suppression actions would be repaired to restore the integrity of pasture boundaries. Additionally, 1.0 miles of existing fence, interior to the fire boundary, would be repaired to restore the integrity of existing pastures.

Monitoring of the burn area would consist of livestock use supervision, vegetation monitoring and weed monitoring (For additional detail, refer to Section VII). Detected weeds would be controlled utilizing herbicide and mechanical methods in accordance with the EA and Decision Record for the Noxious Weed Control Program 1994-1998 (USDI/BLM 1994).

#### B. Nonnative Seeding Alternative

The nonnative seeding alternative would include seeding approximately 1,900 acres of public land in the eastern portion of the burned area and a band in the southwest portion of the burned area, as depicted in seeding areas A, B, and C on figure 3, using rangeland drills during the fall of 2001 or spring of 2002. Those areas seeded would include flat and moderately sloped topography and areas outside of habitat with potential to support Mulford's milkvetch. The nonnative mixture would include cultivars of crested wheatgrass (*Agropyron cristatum*), basin wildrye (*Leymus cinereus*), Ladak alfalfa (*Medicago sp.*), Lewis flax (*Linum perenne var. lewisii*), western yarrow (*Achillea millefolium*), and small burnet (*Sanguisorba minor*) at a drilling rate of approximately 9 pounds per acre (35 seeds per square foot). All seed when mixed would be treated with organic seed coating to enhance germination success and seedling survival. The remaining 1,598 acres of public and 773 acres of private land within the fire boundary would not be seeded due to land ownership, steepness of slopes, its location within islands which did not burn, or unacceptable impacts to special status plant habitat.

Approximately 4 miles of road bladed or disced during suppression actions, 2.5 miles of which is between the Vale Dump and the east fire boundary and 1.5 miles of which is adjacent to the division fence between North Harper and Freezeout allotments to the north of the fire boundary, would also be drill seeded with the nonnative species mixture.

Approximately 2.5 miles of temporary fence would be constructed and maintained to exclude livestock from approximately 2,865 acres of public land in the burned area in West Canal Pasture of North Harper Allotment through July 15, 2003 and until monitoring indicates that desired residual perennial vegetation has recovered to levels that are adequate to support and protect upland function and that seeded species have become established (Figure 3). Similarly, 2.5 miles of temporary fence would be constructed and maintained on the fire boundary and public/private land boundary to exclude livestock from 456 acres of public land in Russell Custodial Pasture of Freezeout Allotment during the period of recovery identified above.

A number of fence locations which were cut during suppression actions would be repaired to restore the integrity of pasture boundaries. Additionally, 1.0 miles of existing fence, interior to the fire



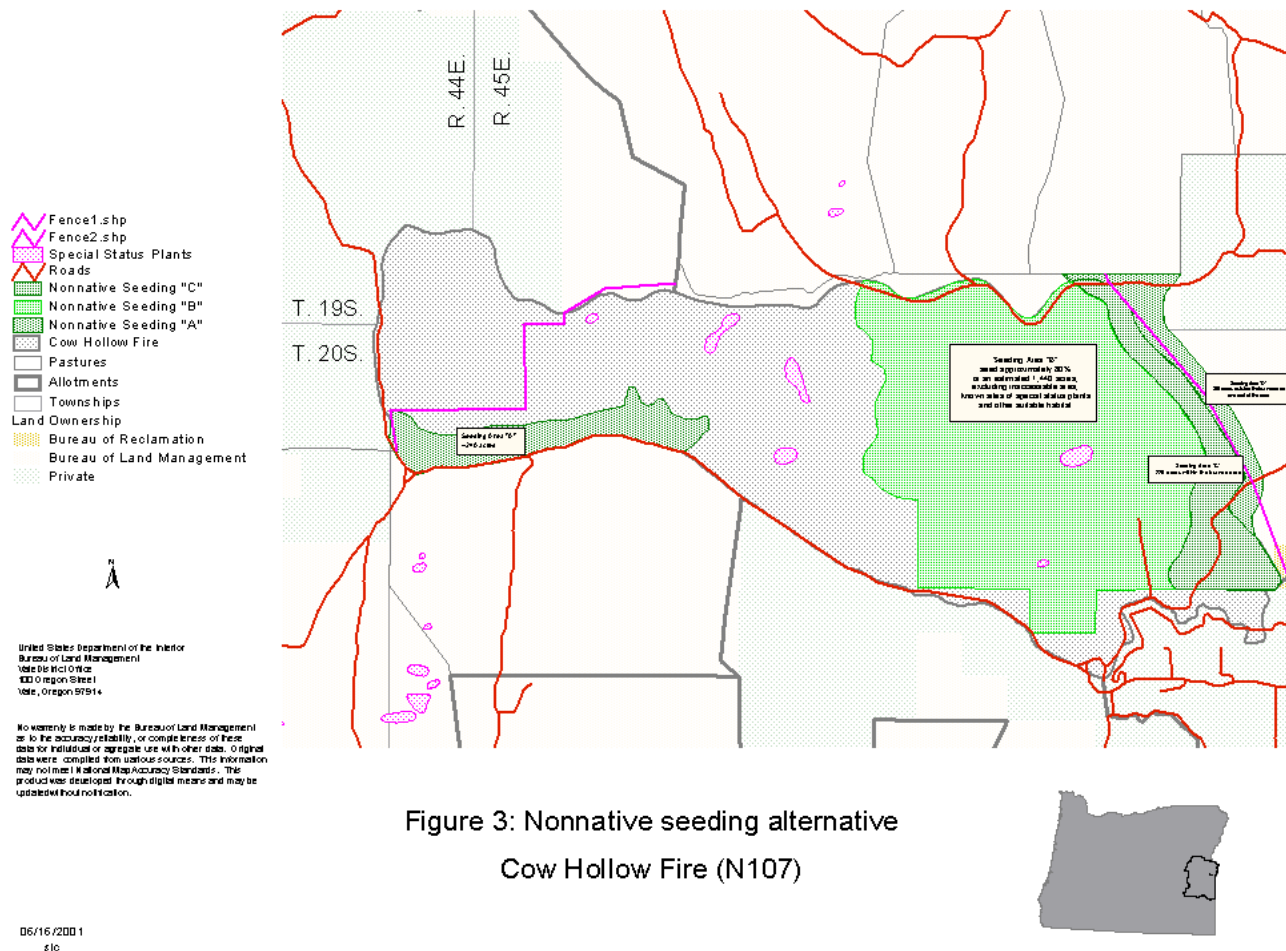


Figure 3: Nonnative seeding alternative  
Cow Hollow Fire (N107)

boundary, would be repaired to restore the integrity of existing pastures.

Monitoring of the burn area would consist of livestock use supervision, vegetation monitoring and weed monitoring (For additional detail, refer to Section VII). Detected weeds would be controlled utilizing herbicide and mechanical methods in accordance with the EA and Decision Record for the Noxious Weed Control Program 1994-1998 (USDI/BLM 1994).

### C. Limited Rehabilitation Alternative

Emergency stabilization and rehabilitation would be limited to the reconstruction of approximately 1.0 miles of existing fence, interior to the fire boundary to restore the integrity of existing pasture boundaries. West Canal and Russell Custodial pastures would be closed to livestock grazing through July 15, 2003 and until monitoring indicates that desired residual perennial vegetation has recovered to levels that are adequate to support and protect upland function.

Revegetation of the burned area would be allowed to occur from seed and plant material which remain

on site and in the soil. No monitoring of the burned area would be scheduled beyond that planned prior to the fire.

#### D. No Action Alternative

No emergency rehabilitation would be completed. Revegetation of the burned area would be allowed to occur from seed and plant material which remains on site and in the soil. Livestock grazing would not be excluded from West Canal nor Russell Custodial pastures..

No monitoring of the burn area would be completed beyond that scheduled prior to the fire.

#### E. Proposed Action

The proposed action would include native species seeding of approximately 1,440 acres of public land in the eastern portion of the burned area, as depicted in seeding areas B on figure 4, using rangeland drills during the fall of 2001 or spring of 2002. Those areas seeded would include flat and moderately sloped topography and areas outside of habitat with potential to support Mulford's milkvetch. The native mixture would including cultivars of bluebunch wheatgrass (*Pseudorogneria spicata*), basin wildrye (*Leymus cinereus*), Indian ricegrass, western wheatgrass (*Pascopyrum smithii*), native forbs, bitterbrush (*Purshia tridentata*), and/or fourwing saltbush (*Artriplex canescens*) at a drilling rate of approximately 9 pounds per acre (35 seeds per square foot) (Table 2). Species mixes may be altered slightly due to seed availability or seed cost. Additionally, a green-strip fire break would be seeded with primarily nonnative species along the eastern boundary of the fire, as depicted in seeding areas C and D of figure 4, approximately 300 yards to either side of a road utilized as a fire line in the Cow Hollow Fire and totaling approximately 420 acres. A second green-strip fire break would be seeded with primarily nonnative species along the southwest boundary of the fire as depicted in seeding area A of figure 4, approximately 300 yards to the north of the Cow Hollow Road and totaling approximately 240 acres. Each of these two fire breaks would include seeding of some unburned areas to complete the seeding adjacent to roads which could be effective in future incidents to reduce the severity of fire behavior or provide a line from which to backfire. All seed when mixed would be treated with organic seed coating to enhance germination success and seedling survival. The remaining 1,598 acres of public and 773 acres of private land within the fire boundary would not be seeded due to land ownership, steepness of slopes, its location within islands which did not burn, or unacceptable impacts to special status plant habitat. In the event of seeding failure in either the native seeding areas or the green-strip nonnative seeding areas due to climatic conditions or other factors, funding sources would be pursued to reseed with species identified following herbicide, soil scarification, or other seed bed preparation as necessary to better ensure success.

Approximately 4 miles of road bladed or disced during suppression actions, 2.5 of which is between the Vale Dump and the east fire boundary and 1.5 of which is adjacent to the division fence between North Harper and Freezeout allotments to the north of the fire boundary, would also be drill seeded with the native species mixture.

All public land acres of the burned area would be broadcast seeded, on completion of drilling, with local Wyoming/basin big sagebrush at a rate of 0.1 pounds pure live seed (pls) per acre approximately one pound per acre bulk). Approximately 400 acres of the sagebrush seeding which are also drill seeded would be cultipacked to better ensure sagebrush seed contact with the soil during germination. Additionally, an estimated 400 acres of the burned area would be planted with 1-0 seedlings of





Custodial Pasture would limit grazing to the period between October 1 and March 1, a period of limited plant growth.

A number of fence locations which were cut during suppression actions would be repaired to restore the integrity of pasture boundaries. Additionally, 1.0 miles of existing fence, interior to the fire boundary, would be repaired to restore the integrity of existing pastures.

Monitoring of the burn area would consist of livestock use supervision, vegetation monitoring and weed monitoring (For additional detail, refer to Section VII). Detected weeds would be controlled utilizing herbicide and mechanical methods in accordance with the EA and Decision Record for the Noxious Weed Control Program 1994-1998 (USDI/BLM 1994).

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Table 2: Proposed Action seed mixes for the Cow Hollow Emergency Stabilization and Rehabilitation Plan

Species	Pounds Per Acre	Seeds per ft <sup>2</sup>	Total Pounds	Approx Cost Per Pound*	Total Cost
<b><i>Native Mix** - 1440 acres</i></b>					
Secar Bluebunch Wheatgrass	3	9.6	4,300	\$8.00	\$34,400
Goldar Bluebunch Wheatgrass	3	9.6	4,300	\$9.00	\$38,700
Magnar Basin Wildrye	1.5	4.5	2,150	\$9.50	\$20,425
Nezpar Indian Ricegrass	0.5	1.6	750	\$14.00	\$10,500
Arriba Western Wheatgrass	0.5	1.3	750	\$3.50	\$2,625
Apar Lewis Flax	0.4	2.7	800	\$2.50	\$2,000
Scarlet Globemallow	0.1	1.1	150	\$30.00	\$4,500
Total	9	30.4	13,200		
				<b>Subtotal</b>	<b>\$113,150</b>
<b><i>Greenstrip Nonnative Mix *** - 660 acres</i></b>					
Fairway Crested Wheatgrass	6	24.1	4,000	\$1.50	\$6,000
Magnar Basin Wildrye	1	3.0	650	\$9.50	\$6,175
Arriba Western Wheatgrass	1	2.6	650	\$3.50	\$2,275
Ladak Alfalfa	0.25	1.2	150	\$2.00	\$300
Small Burnet	0.25	0.3	150	\$1.50	\$225
Apar Lewis Flax	0.4	2.7	300	\$2.50	\$750
Scarlet Globemallow	0.1	1.1	50	\$30.00	\$1,500
Total	9	35.0	5,900		
				<b>Subtotal</b>	<b>\$17,225</b>
<b><i>Shrub Species ****- 3,334 acres</i></b>					
Wyoming Big Sagebrush	1 lb bulk (0.1 lbs pls)		3,350 lbs bulk	\$8.50	\$28,475
				<b>Subtotal</b>	<b>\$28,475</b>
				<b>Total</b>	<b>\$158,850</b>
<p>* The source of seed cost is an CSS County Crops Facility report, OSU Malheur County Extension Office.</p> <p>** Other varieties of native grass species listed or other native forbs may be substituted based on seed availability or cost.</p> <p>*** Other varieties of nonnative grass species listed or other forbs may be substituted based on seed availability or cost.</p> <p>**** Sagebrush seed may include 25 percent or less basin big sagebrush seed, dependent of seed availability and cost.</p>					

#### IV. AFFECTED ENVIRONMENT

##### A. Vegetation

Native shrub steppe vegetation communities contained Wyoming big sagebrush, rabbitbrush, bluebunch wheatgrass, Thurber's needle grass, and Sandberg bluegrass prior to the fire. Areas adjacent to livestock water sources and other areas of previous disturbance were dominated by annual herbaceous species. Cheatgrass was dispersed through most vegetation communities with a number of other annual weedy species. Where native perennial herbaceous species were limited or devoid in the understory of sagebrush/ grassland communities, the shrub community provided competition with annual species for available moisture and soil nutrients.

Sandy soils were dominated by Indian ricegrass and included Mulford's milkvetch as noted earlier.

##### B. Noxious Weeds

Scotch thistle, an aggressive biennial, is present as scattered individuals throughout the burned area and forms a number of areas where dominance is greater. Rush skeletonweed (*Chondrilla juncea*), an invasive perennial noxious weed, is present within the south boundary of the fire and in adjacent sites with sandy soils. Whitetop or hoary cress (*Cardia spp.*), though not known to be present within the area burned, is present adjacent to the burned area and throughout the region.

##### C. Livestock Grazing

The burn area is within West Canal Pasture of North Harper Allotment (00402) and Russell Custodial Pasture of Freezeout Allotment (10404) as listed in table 1. Ten permittees are authorized to graze livestock in North Harper Allotment, though only four currently use West Canal pastures in their grazing rotation. Active AUMs within the 31,500 acre allotment are listed below:

Permittees who currently use West Canal Pasture in addition to other pastures:

Frank Shirts Jr. (sheep)	400 AUM's
Steve and Becky Hawkins (cattle)	809 AUM's
Schulthies Family Trust	135 AUM's
Van Schulthies	84 AUM's

Permittees who currently do not use West Canal Pasture:

Raymond Findley Estate	1602 AUM's
Darrell Standage	96 AUM's
Jerald and Tammy Holloway	278 AUM's
Gary Boor	143 AUM's
Harry Smith	566 AUM's

The grazing permit held by Eddy and Evelyn Sayers authorizes grazing of 13 AUM's on public land within a custodial pasture of North Harper Allotment outside the burned area.

Dan Probert is authorized to graze 99 AUM's on public land, a portion of which is within the boundaries of Cow Hollow Fire, within Russell Custodial pasture of Freezeout Allotment. Russell

Custodial Pasture is comprised of a number of pastures predominantly composed of private land.

#### D. Soils/Watershed

Soils in the area are derived from lacustrine sediments, loess deposits, and alluvium. Textures range from silty clay loams to sandy loams depending on the parent material. These soils have the potential to be highly erosive without vegetative cover and on steep slopes. Soils in the burned area are similar to Xeric Haplocambids (Warden and Royal series), Xeric Haplodurids (Taunton and Gravden series), and Xeric Torriorthents (Kennewick and Wahluke series).

Portions of the burned area more distant from areas of livestock concentration and on fine textured soils support organic crusts composed primarily of lichens prior to the fire. These crusts provide an estimated 50 percent cover of the soil surface in some micro sites.

The fire drains south into Cow Hollow, which is a tributary of Owyhee River, five miles upstream of its confluence with the Snake River. No perennial water sources are identified within the proposed treatment area.

#### E. Wildlife

The proposed treatment area is within year-long range or winter habitat for a number of wildlife species including mule deer and pronghorn antelope, upland game species, and other sagebrush dependent species. There are no wildlife species listed as threatened or endangered under the Endangered Species Act of 1973 in the proposed treatment area. Western sage grouse are a BLM sensitive species. Sagegrouse are not known to be present within the burned area as the nearest known lek are 12 miles south near Blackjack Butte and 12 miles southwest near Kane Springs.

#### F. Recreation and Visual Resources

Dispersed outdoor recreation in the proposed fire rehabilitation area consists primarily of off highway vehicle usage, hunting of upland birds and big game animals, and equestrian activities. Some dispersed general sightseeing occurs. The burn and all proposed actions are within a visual resource management (VRM) Class IV area.

The objective of Class IV is to provide for management activities that require major modification of the landscape. These management activities may dominate the view and become the focus of viewer attention. However, every effort should be made to minimize the impact of these projects by carefully locating activities, minimizing disturbance, and designing the projects to conform to the characteristic landscape.

#### G. Cultural Resources / Paleontology

The route of the Oregon Trail parallels Lytle Boulevard, approximately two miles east of the fire boundary. A corridor adjacent to a portion of that trail south of the town of Vale is identified as a property of national significance with designation as the Oregon National Historic Trail. An area, 3,179 acres, adjacent to that National designation, though outside the fire boundary and all areas of actions identified in the alternatives, is proposed as an Area of Critical Environmental Concern in the

Prehistoric and historic use of this area has been documented by the presence of artifacts and through oral histories. Prehistoric sites are mainly lithic scatters and camp sites associated with springs and water sources. Native American use of this area would have been associated with the seasonal round as family groups followed the resources from lower elevations in the spring to higher elevations in summer. Travel from the Malheur River to the Owyhee River or vis-versa occurred through Cow Hollow and Negro Rock Canyon past Twin Springs. This area is dotted with springs that would have been utilized by big game species, upland game species and humans.

#### H. Threatened and Endangered (T&E) Plants

No plant species listed or proposed for listing under the Endangered Species Act of 1973 are known to be present within the area burned. Mulford's milkvetch, a species listed by the State of Oregon as endangered, has been located on a number of sites providing sandy habitats within and adjacent to the fire. Similarly, Malheur forget-me-not (*Hackelia cronquistii*), another species listed by the State of Oregon as endangered, has been located on north facing slopes protected by sagebrush cover within a few miles of the fire boundary. No ground disturbing actions are proposed within the habitats of either species. No other special status plant species are known or suspected within the immediate area.

#### I. Climate/Topography

Cow Hollow Fire occurred in rolling hills and rocky ridges associated with Grassy Mountain where the elevation above sea level ranges from 2600 feet to 2700 feet. Semi desert shrub steppe vegetation communities result from cold winters and hot dry summers. The long term average annual precipitation measured at Vale, Oregon (six miles north of the fire boundary) is 9.77 inches (National Oceanic and Atmospheric Administration Climatological Data Annual Summary; Oregon 1999). Precipitation occurs primarily as snow fall during the winter with occasional mid-summer thunder storms.

#### J. Areas of Critical Environmental Concern

An area adjacent to Cow Hollow Fire have been proposed for management as Areas of Critical Environmental Concern (ACEC) within the Draft Southeast Oregon Resource Management Plan / Environmental Impact Statement (USDI/BLM 1998). Oregon Trail ACEC-Keeney Pass Segment is located two miles east of the fire boundary as noted earlier. Proposed rehabilitation actions are outside of the proposed ACEC and will not be visible from the majority of the ACEC.

#### K. Other Mandatory Elements

The following mandatory elements are either not present or would not be affected by the proposed action or alternatives:

##### 1. Air Quality



2. Wild and Scenic Rivers
3. Native American Religious Concerns
4. Hazardous wastes
5. Prime or unique farmlands
6. Wilderness or Wilderness Study Areas
7. Wild Horse/Burro Management
8. Wetlands/Riparian, Flood Plains
9. Environmental Justice

## V. ENVIRONMENTAL CONSEQUENCES

### A. Native Seeding Alternative

#### 1. Vegetation

Drilling of seeding area B and C would provide an opportunity and seed source for a more stable perennial vegetative cover over much of the burned area, especially within areas recently dominated by annual species, on road shoulders and fire-lines impacted by suppression actions. With successful establishment of seedings, native perennials would replace more flammable annuals, somewhat reducing the frequency and severity of wildfire. Establishment of native perennial grasses would restore ecological function to the portions of Cow Hollow adjacent to private land. Establishment of sagebrush, fourwing saltbush and bitterbrush would provide vegetative community diversity and restore structure to the vegetative community that has been lost to the Cow Hollow Fire and periodic wildfire in this area. Risk of poor establishment of native species in areas previously dominated by annual species, especially in the event of limited soil moisture in the spring of 2002, would be greater than the similar risk of planting more competitive nonnative species such as crested wheatgrass which is adapted to drier conditions and is tolerant of greater grazing impacts. Wildlife habitat values and species diversity would be greater with establishment of native species as compared to nonnative species resulting from rehabilitation actions.

Temporary exclusion of livestock from West Canal and Russell Custodial pastures, including the burned area and areas seeded and/or planted, would allow recovery of residual desirable species and establishment of seeded species without impacts from sheep and cattle grazing.

#### 2. Noxious weeds

Establishment of perennial species would help prevent the potential for spread and takeover of the site by noxious weeds, particularly rush skeletonweed, Scotch thistle, and whitetop. Establishment of a diverse shrub component would more fully occupy the soil profile with roots of desirable perennial species as compared to shallow rooted perennial grasses and forbs alone. Full occupation of the soil profile with roots of desirable species would provide additional competition to reduce dominance by deep rooted weedy species. Establishment of diverse perennial vegetation communities including grasses, forbs and shrubs would help prevent or minimize the proliferation and invasion of noxious weed species within the burned area and adjacent to roads impacted by suppression actions. A reduction in the occurrence of weeds adjacent to roads would limit transport of seed to new sites within the burn area and

offsite.

### 3. Livestock Grazing

Reconstruction of fences damaged by the fire would retain planned grazing schedules for North Harper and freezeout allotments. Benefits of implementing those grazing schedules would continue to be realized.

Livestock would be excluded through at least two growing seasons and until seeded species are established from West Canal and Russell Custodial pastures, including the majority of the burned area and all areas proposed for seeding and planting. Scheduled grazing within West Canal Pasture, as defined in the allotment management plan with a deferred system, identifies an average annual use of 607 AUM's by cattle. This use represents approximately 60 percent of the combined authorized use of 1028 AUM's in North Harper Allotment by Van Schulthies, Schulthies Family Trust, and Steve Hawkins. Sheep use is less well defined with terms of the permit requiring that camps be moved at least every fifth day to prevent repeat grazing of any area. It is estimated that approximately 15 percent of Frank Shirt's authorized use of 400 AUM's in North Harper Allotment comes from West Canal Pasture. As a result of closing West Canal Pasture to livestock grazing, 607 AUM's of cattle use and 60 AUM's of sheep use would be forgone for two years. Livestock grazing schedules would be adjusted short term to continue the authorization of livestock grazing in North Harper Allotment while continuing to meet management objectives in the absence of use of West Canal Pasture.

In the long term, positive benefits would accrue to livestock operators due to the establishment of perennial vegetation. An increased and more stable forage base would be established, allowing for increased livestock gains and more stable livestock operations over the long term.

### 4. Soils/Watershed

Soil erosion would increase in the short term as a result of loss of vegetative cover from the fire. Soil erosion rates would decrease as the perennial species gain dominance of the site in years subsequent to seeding. The annual species which previously vegetated the area provide much less protection of the soil surface than would desirable perennial species. With implementation of this alternative and successful establishment of desired species, erosion rates would decrease further than under the no action alternative due to establishment of perennial species. Perennial vegetation would reduce soil erosion and down stream sedimentation by providing improved protection of the soil surface and by reducing the frequency of wildfire. Establishment of perennial vegetation would also be beneficial to reestablishing microbiotic crusts since dominance by exotic annual vegetation exclude these species.

### 5. Wildlife

The proposed action would result in the reestablishment and maintenance of higher quality and greater quantity of year-long forage, browse and cover for mule deer and pronghorn antelope within the project area with the establishment of desirable herbaceous and shrub species. Structural habitat for sagebrush dependent species, including potentially sage grouse, would be restored in the long term with reestablishment of desirable shrub species. Foraging and habitat

values provided by perennial herbaceous species would be improved.

## 6. Recreation and Visual Resources

Impacts to dispersed recreation activities would be insignificant. In the event that rehabilitation activities occur during game hunting seasons, any game species close to the activities would be temporarily disturbed.

Visual resources within and adjacent to the proposed action would be enhanced with development of desirable perennial plant species and vegetation structure. Surface impacts of the proposed rehabilitation efforts do not exceed management objectives for visual resource Class IV. Visual evidence of drilled seeding would remain evident long term, though would be obscured with development of sagebrush cover over time.

## 7. Cultural Resources / Paleontology

A Class III cultural resources survey would be conducted prior to surface disturbing activities. Sites will be flagged, recorded and avoided as appropriate. A survey for paleo resources will be conducted prior to surface disturbing activities. If paleo resources are located, depending on the nature and extent of the fossil locality, the area will either be flagged and avoided during rehabilitation activities or the fossils will be recovered prior to rehabilitation activities.

## 8. T&E Plants

Special Status plant species would not be affected since no activity is planned within known or suspected habitats. Use of native species adjacent to the known site of Mulford's milkvetch would better limit weed invasion of the special status plant site.

# B. Nonnative Seeding Alternative

## 1. Vegetation

Seeding of nonnative species in seeding areas A, B, and C would provide an opportunity and seed source for a more stable perennial vegetative cover over much of the burned area, especially within areas recently dominated by annual species, on road shoulders and fire-lines impacted by suppression actions. With successful establishment of seedings, nonnative perennials would replace more flammable annuals, somewhat reducing the frequency and severity of wildfire. Establishment of nonnative perennial grasses would partially restore ecological function to the portions of Cow Hollow adjacent to private land. Risk of poor establishment of nonnative species in areas previously dominated by annual species, especially in the event of limited soil moisture in the spring of 2002, would be less than the similar risk of planting more competitive native species such as cultivars of bluebunch wheatgrass which requires greater soil moisture during establishment and is less tolerant of grazing impacts. Wildlife habitat values and species diversity would be less with establishment of nonnative species as compared to native species resulting from rehabilitation actions.

The area of nonnative seedings in these sand hill vegetation communities would increase with

its introduction into West Canal Pasture and Russell Custodial Pasture, areas immediately adjacent to a number of earlier seedings in East Cow Hollow, East Page, West Page, Boulevard Seeding, and Cow Hollow pastures.

Establishment of nonnative perennial species adjacent to approximately seven miles of roads and two-tracks would tend to enhance the green-strip break in highly flammable annual vegetation, reducing future spread of wildfire and additional options for suppression actions.

Temporary exclusion of livestock from the burned areas of West Canal and Russell Custodial pastures through temporary fencing, including areas seeded, would allow recovery of residual desirable species and establishment of seeded species without impacts from sheep and cattle grazing.

## 2. Noxious weeds

Benefits of establishing competitive perennial herbaceous vegetation within the burn area and adjacent to roads would generally be similar to those identified in the native seeding alternative. Lack of deep rooted shrub species which can compete with tap-rooted noxious weed species for deeper soil moisture would limit those benefits, especially concerning weed species which continue growth outside the active growing season of many of our native herbaceous species. With the improved likelihood of establishment of nonnative species as compared to native species, opportunities to preclude shallow rooted noxious weed spread would be enhanced.

## 3. Livestock Grazing

Impacts to authorized livestock grazing and associated commodity production would be similar to those identified in the native seeding alternative, including the continuation of benefits of implementing current grazing schedules. Fewer AUM's would be forgone by livestock operators with construction of an estimated five miles of temporary fence and retention of 1/3 of West Canal and the majority of Russell Custodial pastures available for grazing through the next two growing seasons and longer if necessary. It is estimated that approximately 400 AUM's of cattle use would be lost short term annually by Van Schulthies, Schulthies Family Trust, and Dan Probert, the operators authorized to graze cattle in affected pastures of these allotments. Additional operators authorized to graze in the North Harper Allotment may indirectly bear some of this impact as all grazing schedules would be adjusted to accommodate grazing reductions short term. Frank Shirts, the sheep operator, would lose an estimated 40 AUM's annually for a short term. Benefits of increased forage production long term from the establishment of nonnative species which are more tolerant of grazing impacts and limited establishment of shrub species would be greater than with implementation of the native seeding alternative.

## 4. Soils/Watershed

Impacts to soil and watershed values would be similar to those identified in the proposed alternative. Limiting shrub establishment to natural regeneration would result in less effective binding of deep soils, especially in the absence of other deep rooted species.

## 5. Wildlife

Habitat values provided by nonnative seedings and limited shrub reintroduction would be diminished for mule deer, pronghorn antelope, and sagebrush dependent species. Timing, season, and intensity of big game depredation on private crop lands adjacent to the burned area would be expected to change as animals chose forage sources as well as thermal and hiding cover.

Impacts to special status animal species would be similar to those identified in the native seeding alternative.

## 6. Recreation and Visual Resources

Impacts to recreation and visual resources would be similar to those identified in the native seeding alternative, though visual lines between the nonnative seeding and adjacent vegetation communities would be less consistent with natural topographic features and aspect changes. A long term lack of sagebrush and other shrub species in the burned area would also be visually obvious.

## 7. Cultural Resources / Paleontology

Impacts to cultural resources would be similar to those identified in the native seeding alternative.

## 8. T & E Plant Species

Special status plants would be slightly more affected than in the native seeding alternative. Use of nonnative species adjacent to the known site of Mulford's milkvetch would increase the likelihood of long term movement of competitive plants into that special status plant site.

# C. Limited Rehabilitation Alternative

## 1. Vegetation

Much of the burned area dominated by annual species, in addition to those areas previously dominated by sagebrush with an annual species understory would revegetate with a herbaceous annual dominance. Vegetative structural and species diversity would remain low in many of these areas dominated by annual species. Annual species and noxious weed species would continue to dominate many sites within the burn with a mat of cheatgrass and other annual species seed. The potential for invasion of burned areas and other sites of soil disturbance opened to noxious weed seedling establishment would remain high. Potential for repeated wildfire and rapid spread would be high. The cumulative effects of past and future wildfire adjacent to this burn would cause a continued loss of vegetative diversity and structure which would accelerate over time as more of these low elevation ranges are converted to cheatgrass dominated grasslands.

Temporary exclusion of livestock from West Canal and Russell Custodial pastures, including

the burned area, would allow recovery of residual desirable perennial species without impacts from sheep and cattle grazing.

## 2. Noxious Weeds

Failure to seed desirable perennial herbaceous species over much of the areas previously dominated by annual species would perpetuate the spread and increased dominance of noxious and other weedy species, resulting in the need for increased control efforts in the future. Seed production of weeds and seed transport would be significant, limiting the success of natural recovery of remaining desirable perennial plants. The areas previously dominated by sagebrush and other desirable deep-rooted species would be susceptible to further invasion by noxious and weedy species. Lack of shrubs would leave the area susceptible to invasion by rush skeletonweed and other species dependent on mid summer and fall deep soil moisture. These annual vegetation dominated areas would continue to decline in seral condition as they continue to lose remaining native perennial vegetation, especially with the continuation of frequent fire return to these fire prone vegetation communities.

## 3. Livestock Grazing

Livestock would not be allowed to graze the burn area through two growing seasons as required by BLM policy. Short term exclusion of livestock from West Canal Pasture of North Harper Allotment and Russell Custodial Pasture of Freezeout Allotment to provide opportunities for recovery of fire impacted vegetative species would result in impacts similar to those identified in the native seeding alternative. Long term benefits to livestock production potential would not be realized as the density of desirable perennial vegetation is not increased and likely would continue to decline with more frequent fire.

## 4. Soils/Watershed

Soil erosion would increase in the short term as a result of loss of vegetation cover. Erosion rates would decrease as the annual species revegetate the site over a period of one to two years. Soil erosion rates would remain elevated above those possible with dominance by desirable perennial vegetation. Increased dominance by exotic annual species would inhibit reestablishing microbiotic crusts.

## 5. Wildlife

Wildlife habitat and forage quality would not improve. The loss of shrub habitat would negatively affect gig game and sagebrush dependent species over the long term as Wyoming big sagebrush is slow to reestablish in burned areas. Depredation of adjacent private crop-lands would increase and be directed as travel corridors of animals change.

## 6. Recreation and Visual Resources

The return of game species for hunting may be somewhat delayed. Increased dominance by undesirable annual and weed species would hinder efforts to improve game species habitat in the burned area.



Preferred perennial vegetation would not be restored in the short nor long term with the exception of those vegetation communities which would recover with protection from livestock grazing. There would be a significant delay in returning the area to an acceptable visual setting of some type of vegetative cover with structure similar to the natural setting.

#### 7. Cultural Resources

There would be no affect to cultural resources from mechanized equipment as a result of the limited rehabilitation alternative, however surface disturbance may be greater long term from livestock trampling and erosional factors without vegetation to provide surface stability. Similarly, there would be no affect to fossil resources as a result of rehabilitation actions, however unauthorized collection and surface disturbance may be greater from livestock trampling and erosional factors without vegetation to provide surface stability

#### 8. T & E Plant Species

No T & E or special status species or their habitat would be directly affected. However, as the area may be invaded by increasing numbers of noxious weeds, a much larger source of undesirable seed would be available for invasion into the nearby special status plant species habitat. Similarly, an increased dominance by annual species would increase fine fuel loading and the risk of larger future fires affecting nearby special status plant habitat.

### D. No Action

#### 1. Vegetation

Annual species and noxious weed species would continue to dominate many sites within the burn with a mat of cheatgrass and other annual species seed. The potential for invasion of these sites by noxious weeds would remain high. Potential for repeated wildfire spread would be high. The cumulative effects of past and future wildfire adjacent to this burn would cause a continued loss of vegetative diversity and structure which would accelerate with no action.

Continued authorization of livestock grazing within West Canal and Russell Custodial pastures would delay and in many instances preclude recovery of residual desirable perennial species with added impacts from sheep and cattle grazing.

#### 2. Noxious weeds

Many sites would be susceptible to domination by noxious weeds found in and adjacent to the area burned. Medusahead is a competitive annual species with little forage value and the ability to further limit potential for successful seeding of desirable species once established. Scotch thistle, rush skeletonweed, and whitetop are aggressive and highly invasive species. With little competition from desirable perennial grasses and shrubs, these weeds may dominate the burn area and adjacent rangeland in the long term.

#### 3. Livestock Grazing

Livestock would be allowed to continue to graze the burn area and benefit from a flush of

growth resulting from the release of nutrients and moisture for herbaceous growth in the short term. As a result, short term positive impacts to livestock grazing would occur with additional forage produced. Long term negative impacts to forage production would result from grazing effects in addition to fire effects to desirable perennial herbaceous species. No long term benefits would occur as there would be no improvement to forage production or vegetative conditions. Livestock production may be further negatively impacted in the long term if noxious weed species increase in the burn area, further reducing forage production.

#### 4. Soils/Watershed

Soil erosion would increase in the short term as a result of loss of vegetative cover. Erosion rates would decrease as the annual species revegetate the site over a period of one or two. Soil erosion rates would remain higher than under the proposed action or any of the alternatives including seeding of desirable perennial species due to the lack of perennial vegetative cover. Increased dominance by exotic annual species would inhibit reestablishing microbiotic crusts.

#### 5. Wildlife

Wildlife habitat and forage quality would not improve. The loss of shrub habitat would negatively affect big game and sagebrush dependant species much as identified in the limited rehabilitation alternative.

#### 6. Recreation and Visual Resources

The return of game species for hunting may be somewhat delayed. Increased dominance by undesirable annual and weed species would hinder efforts to improve game species habitat in the burned area.

Preferred perennial vegetation would not be restored in the short nor long term with the exception of those vegetation communities which would recover due to inaccessibility by livestock grazing. There would be a significant delay in returning the area to an acceptable visual setting of some type of vegetative cover with structure similar to the natural setting.

#### 7. Cultural Resources / Paleontology

There would be no effect to cultural resources from mechanized equipment as a result of the no action alternative, however surface disturbance may be greater from livestock trampling and erosional factors without vegetation to provide surface stability. Similarly, there would be no effect to fossil resources as a result of rehabilitation actions, however unauthorized collection and surface disturbance may be greater from livestock trampling and erosional factors without vegetation to provide surface stability

#### 8. T & E Plant Species

No T & E or special status species would be directly affected. However, as the area may be invaded by increasing numbers of noxious weeds, a much larger source of undesirable seed would be available for invasion into the nearby special status plant species habitat. Similarly, an increased dominance by annual species would increase fine fuel loading and the risk of

larger future fires affecting nearby special status plant habitat.

## E. Proposed Action

### 1. Vegetation

Drilling of seeding area A, C, and D with the nonnative species mix and seeding area B with the native species mix would provide an opportunity and seed source for a more stable perennial vegetative cover over much of the burned area, especially within areas recently dominated by annual species, on road shoulders and fire-lines impacted by suppression actions. With successful establishment of seedings, desirable perennial species would replace more flammable annuals, somewhat reducing the frequency and severity of wildfire. Establishment of perennial grasses, forbs and shrubs would restore ecological function to the portions of Cow Hollow adjacent to private land. Establishment of sagebrush, fourwing saltbush and bitterbrush would provide vegetative community diversity and restore structure to the vegetative community that has been lost to the Cow Hollow Fire and periodic wildfire in this area. Risk of poor establishment of native species in those areas previously dominated by annual species, especially in the event of limited soil moisture in the spring of 2002, would be greater than the similar risk of planting more competitive nonnative species such as crested wheatgrass which is adapted to drier conditions and is tolerant of greater grazing impacts. Wildlife habitat values and species diversity would be greater with establishment of native species as compared to nonnative species resulting from rehabilitation actions.

Nonnative firebreaks adjacent to two roads would improve opportunities to control future wildfire by moderating fire behavior in less flammable fuels or providing an improved anchor from which to backburn. A limited amount of sagebrush in areas not burned would be lost during drilling of greenstrips outside the burned area.

Temporary exclusion of livestock from the burned portion of West Canal pasture with temporary fencing and limiting the season of use in Russell Custodial Pasture to fall and winter only would allow recovery of residual desirable species and establishment of seeded species without impacts from sheep and cattle grazing.

### 2. Noxious weeds

Establishment of perennial species would help prevent the potential for spread and takeover of the site by noxious weeds, particularly rush skeletonweed, Scotch thistle, and whitetop. Establishment of a diverse shrub component would more fully occupy the soil profile with roots of desirable perennial species as compared to shallow rooted perennial grasses and forbs alone. Full occupation of the soil profile with roots of desirable species would provide additional competition to reduce dominance by deep rooted weedy species. Establishment of diverse perennial vegetation communities including grasses, forbs and shrubs would help prevent or minimize the proliferation and invasion of noxious weed species within the burned area and adjacent to roads impacted by suppression actions. A reduction in the occurrence of weeds adjacent to roads would limit transport of seed to new sites within the burn area and offsite.

### 3. Livestock Grazing

Reconstruction of fences damaged by the fire would retain planned grazing schedules for North Harper and Freezeout allotments. Benefits of implementing those grazing schedules would continue to be realized.

Livestock would be excluded through at least two growing seasons and until seeded species are established within the burned and/or seeded portions of West Canal. It is estimated that approximately 400 AUM's of cattle use would be lost short term annually by Van Schulthies, Schulthies Family Trust, and Steve Hawkins, the operators authorized to graze cattle in affected pastures of this allotment. Additional operators authorized to graze in the North Harper Allotment may indirectly bear some of this impact as all grazing schedules would be adjusted to accommodate grazing reductions short term. Frank Shirts, the sheep operator, would lose an estimated 40 AUM's annually for a short term. Livestock grazing schedules would be adjusted short term to continue the authorization of livestock grazing in North Harper Allotment while continuing to meet management objectives in the absence of use of a portion of West Canal Pasture. Flexibility of using Russell Custodial Pasture at times other than periods of plant dormancy would be lost though no reduction in planned use is anticipated.

In the long term, positive benefits would accrue to livestock operators due to the establishment of desirable perennial vegetation. An increased and more stable forage base would be established, allowing for increased livestock gains and more stable livestock operations over the long term.

#### 4. Soils/Watershed

Soil erosion would increase in the short term as a result of loss of vegetative cover from the fire. Soil erosion rates would decrease as the perennial species gain dominance of the site in years subsequent to seeding. The annual species which previously vegetated the area provide much less protection of the soil surface than would desirable perennial species. With implementation of this alternative and successful establishment of desired species, erosion rates would decrease further than under the no action alternative due to establishment of perennial species. Perennial vegetation would reduce soil erosion and down stream sedimentation by providing improved protection of the soil surface and by reducing the frequency of wildfire. Establishment of perennial vegetation would also be beneficial to reestablishing microbiotic crusts since dominance by exotic annual vegetation exclude these species.

Establishment of greenstrips would potentially limit the size of future fire resulting in smaller fires which burn any given site less often. Vegetation structure, primarily as contributed by shrub species, would be retained longer with reduced fire frequency.

#### 5. Wildlife

The proposed action would result in the reestablishment and maintenance of higher quality and greater quantity of year-long forage, browse and cover for mule deer and pronghorn antelope within the project area with the establishment of desirable herbaceous and shrub species. Structural habitat for sagebrush dependent species, including potentially sage grouse, would be restored in the long term with reestablishment of desirable shrub species and retained longer with successful greenstrip establishment. Foraging and habitat values provided by perennial

herbaceous species would be improved.

#### 6. Recreation and Visual Resources

Impacts to dispersed recreation activities would be insignificant. In the event that rehabilitation activities occur during game hunting seasons, any game species close to the activities would be temporarily disturbed.

Visual resources within and adjacent to the proposed action would be enhanced with development of desirable perennial plant species and vegetation structure. Surface impacts of the proposed rehabilitation efforts do not exceed management objectives for visual resource Class IV. Visual evidence of drilled seeding would remain evident long term, though would be obscured with development of sagebrush cover over time.

#### 7. Cultural Resources / Paleontology

A Class III cultural resources survey would be conducted prior to surface disturbing activities. Sites would be flagged, recorded and avoided as appropriate. A survey for paleo resources would be conducted prior to surface disturbing activities. If paleo resources are located, depending on the nature and extent of the fossil locality, the area would either be flagged and avoided during rehabilitation activities or the fossils would be recovered prior to rehabilitation activities.

#### 8. T&E Plants

Special Status plant species would not be affected since no activity is planned within known or suspected habitats. Use of native species adjacent to the known site of Mulford's milkvetch would better limit weed invasion of the special status plant site.

## VI. CONSULTATION AND COORDINATION

The Interagency Emergency Fire stabilization and Rehabilitation Handbook (H-1742 version 1.0) recommends entering into cooperative efforts for rehabilitation where possible. Cooperators in the proposed rehabilitation effort resulting from the Cow Hollow Fire include private and government entities as follow:

- A. Oregon Department of Fish and Wildlife (ODF&W): ODF&W was contacted during plan development to ensure wildlife habitat needs were considered fully with proposed plans.
- B. Oregon Department of Agriculture (ODA): Long term cooperative efforts between ODA and BLM to inventory and control existing and new infestations of weeds on public land will be extended to the burned area. This cooperative effort will enhance the probability of effectively controlling the establishment and spread of target species.
- C. North Harper Allotment Permittees: Proposed rehabilitation actions were coordinated with

grazing permittees. Permittees have agreed to maintain fences necessary to exclude livestock grazing from burned areas or limit use to non-growing season periods for two growing seasons, and any additional time determined necessary to ensure successful establishment of vegetation communities resulting from rehabilitation actions.

## VII. MONITORING

### A. Noxious weeds

Monitoring of the burned area for two years would be required to locate and control noxious weeds. Periodic ground surveys would be conducted monthly from May through October. Herbicide and mechanical treatment would be implemented as appropriate and consistent with existing coordinated weed control methods to control detected noxious and weedy species and to ensure success of rehabilitation actions.

### B. Vegetation

The burned area would be monitored for desirable perennial species, including ocular inspection, to determine degree and extent of establishment within seeded areas as well as vegetative recovery of non-seeded areas. Monitoring will be done in representative areas of seeding treatments and the untreated burned area in at least the first three years of the project. Monitoring will include measurements of vegetation attributes, photo plots, and techniques to determine species occurrence, composition and vigor.

### C. Livestock

Periodic use supervision will be conducted on the project area to ensure livestock are excluded during establishment and recovery of desirable vegetation on the burned area. Following two growing seasons of livestock exclusion, a determination will be made based on monitoring information when livestock grazing can be returned to the burned area and seedings.

## VIII. SUMMARY

The Cow Hollow Fire burned an area of moderately erosive soils that support scattered stands of highly flammable annual vegetation. The history of wildfire in adjoining rangeland has reduced year-long habitat of big game and sagebrush dependent species. In the absence of the establishment of desirable perennial species, including shrub species, within the burned area, there is potential for increased erosion, invasion of noxious weeds, loss of soil and repeated wildfire. The proposed action would provide an opportunity to establish and enhance perennial vegetative cover that would protect the soil resource; reduce erosion; minimize noxious weed invasion; reduce sedimentation; enhance wildlife habitat, and reduce the threat of repeated wildfire.



## IX. ANNUAL WORK PLAN SECTION

A cost/risk assessment is attached as Appendix 2. Listed below by fiscal year is a summary of ESR (2822) funding needs for the proposed action:

Cow Hollow Fire (N 107)		FY		
Description	Item	2001	2002	2003
Plan / EA Preparation	2 WMs	\$8,000.		
Plan Administration	2 WMs		\$8,000.	
Seed Purchase		\$159,000.		
Cultural Survey	1 WM		\$4,000.	
Seed Preparation/Handling			\$9,500.	
Section Corner Location/Misc.	1 WM		\$4,000.	
Rangeland Drilling	Equipment/Misc.		\$12,500.	
	Labor		\$14,000.	
Broadcast Seeding	Equipment/Labor		\$28,000.	
Shrub Planting	Seedling Purchase		\$3,000.	\$3,000.
	Labor		\$12,000.	\$12,000.
Rehabilitation Monitoring	Labor		\$4,000.	\$4,000.
Weed Monitoring	Labor		\$4,000.	\$4,000.
Weed Treatment	Equipment/Labor		\$5,000.	\$5,000.
Boundary Fence Reconstruction	1.0 miles		\$1,000.	
Temporary Fence Construction	2.5 miles		\$11,000.	
Temporary Fence Removal	2.5 miles			\$2,000.
<b>Totals</b>		<b>\$167,000</b>	<b>\$120,000.</b>	<b>\$30,000.</b>

## X. ESR PROJECT SUMMARY

Fire Name: Cow Hollow Fire

Fire Number: N 107

Fire Control Date: 06/17/2001

Acres BLM Burned: 3,334

Start of Rehabilitation Project (Mo./Yr):08/2001

Completion of Rehabilitation Project (Mo./Yr): 09/2003

Miles of Temporary Fence: 2.5  
Miles of Permanent Fence Rebuilt: 1.0  
No. of Soil/Watershed Structures: 0  
Acres Reforestation: 0  
Acres of Revegetation<sup>1</sup>: 2,100 acres PD drilled, 3,334 acres PD broadcast.  
Acres of Burned Area Protected for Natural Regeneration<sup>2</sup>: 3,334 PD  
Total Acres Rehabilitated<sup>3</sup>: 3,334 PD  
Estimated ESR Funding Current Year (FY2000): \$167,000.  
Estimated ESR Funding Second Year (FY2001): \$120,000.  
Estimated ESR Funding Third Year (FY2002): \$30,000.  
Total Cost Rehabilitation Project: \$317,000.

## XI. LIST OF PREPARERS/REVIEWERS

Steve Christensen	Range Management Specialist
Bob Alward	Outdoor Recreation Planner
Jean Findley	Botanist
Diane Pritchard	Archaeologist
Shaney Rockefeller	Hydrologist/Soil Scientist
Al Bammann	Wildlife Biologist
Richard Martinez	Engineering Technician
Jerry Bourasa	Range Technician
Jerry Erstrom	Weed Coordinator/Fire Rehabilitation Coordinator
Lynne Silva	Range Technician, Weeds
Dave Evans	Force Account Work Leader
Jon Freeman	Multi Resources Staff Supervisor
Tom Dabbs	Field Manager, Malheur Resource Area

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<sup>1</sup>**Acres of Revegetation** refers to the acres of the burn that is drilled, aerial seeded, seedlings transplanted, etc. Acreage drilled and aerially seeded is not double counted.

<sup>2</sup>**Acres of Burned Area Protected for Natural Regeneration** refers to burned areas that will recover to satisfactory vegetation with exclusion of grazing and/or human uses.

<sup>3</sup>**Total Acres Rehabilitated** equals the acres of revegetation plus acres of burned area protected for natural regeneration.

## XII. CITATIONS

USDI/BLM. 1994. EA and Decision Record for the Noxious Weed Control Program 1994-1998 (EA OR-030-89-19. Vale District Bureau of Land Management. Vale, Oregon.

USDI/BLM 1998. Draft Southeast Oregon Resource Management Plan / Environmental Impact Statement. Vale District Bureau of Land Management. Vale, Oregon.

## XIII. ENVIRONMENTAL ASSESSMENT DECISION REPORT

### Finding of No Significant Impact / Decision Record

On the basis of the information contained in this Environmental Assessment and all other information available, it is my determination that the proposed action and all alternatives are in conformance with the land use plan for Malheur Resource Area. The proposed action and all alternatives do not constitute a major federal action significantly affecting the quality of the human environment and therefore an environmental impact statement (EIS) is not required. It is my decision to implement the proposed action described in this EA (OR-030-01-011). In the event that seed availability is limited following the potential for extensive fire throughout the western United States this year and precludes the drilling of specifically identified seed varieties and species, use of substitute species as identified in the proposed action may be implemented.

s/ Sandra L Guches  
Authorized Official

8-13-01  
Date

## Appendix 1

### NATIVE/NONNATIVE PLANT WORKSHEET

#### Proposed Native Plants in Seed Mixture

1. Are the native plants proposed for seeding adapted to the ecological sites in the burned area?

Yes [X] No [ ] Rationale: Proposed native seed mix species are present in and adjacent to the project area and adapted to the sites proposed for the native seed mix.

2. Is seed or seedlings of native plants available in sufficient quantity for the proposed project?

Yes [X] No [ ] Rationale: Seed reserves are held in the Boise Seed Warehouse. During the early season occurrence of this fire, orders for those species not available from the warehouse have a high probability of being filled. In the event that sufficient native seed is not available to meet needs for proposed actions, other analyzed alternatives include the option to substitute other adapted perennial species consistent with either the native or nonnative mix.

3. Is the cost and/or quality of the native seed reasonable given the project size and Land Use and Rehabilitation Plan objectives and the guidance in BLM Manual 1745?

Yes [X] No [ ] Rationale: Although the native seed is more costly than comparable introduced species, its use is reasonable given the project size and direction in BLM Manual 1725 and 1745 on the use of native seed. Additionally, presence of a Bureau sensitive plant species on sandy soils within the burned area, though not planned for treatment, precludes the use of competitive nonnative species in much of the area where seeding is proposed.

4. Will the native plants establish and survive given the environmental conditions and the current or future competition from other species in the seed mix or from exotic plants?

Yes [X] No [ ] Rationale: Native plants should have a reasonable chance for establishment and survival in those areas proposed for the native plant mix. In the event of seeding failure due to atypical climatic conditions or other unforeseen causes, sources of funding may be pursued to reseed using additional seed-bed preparation as necessary to limit competition from annual species.

5. Will the current or proposed land management (livestock, recreation use, wildlife populations, etc.) after the seeding establishment period maintain the seeded native plants in the seed mixture?

Yes [X] No [ ] Rationale: Seeded plants should be able to be maintained on the project area under current uses and proposed uses. Planned protection from domestic animal grazing for two years and until

seeded species become established should also benefit residual plants which survived the fire. Grazing schedules have been established to limit growing season livestock use in Grassy Mountain Pasture until after seed set annually.

### **Proposed Nonnative Plants in Seed Mixture**

1. Is the use of nonnative plants necessary to meet objectives, e.g., consistent with applicable land use/activity plans ?

Yes ☒ No ☐ Rationale: The areas identified for the nonnative (greenstrip) seed mix are dominated with cheatgrass and other competitive annual species and abut crested wheatgrass seeding established a number of decades ago. Nonnative perennials would have a significantly improved chance of successful establishment and maintenance in these areas, given the competition of these annual invasive species and would remain green longer into the growing season than most native species, thus performing better to reduce the continuity of highly flammable fuels.

2. Will nonnative plants meet the objective(s) for which they are planted without unacceptably diminishing diversity and disrupting ecological processes (nutrient cycling, water infiltration, energy flow, etc.) in the plant community?

Yes ☒ No ☐ Rationale: The proposed seed mix would significantly improve vegetative diversity and ecological processes by establishing perennial vegetation in areas dominated by annual invasive species. The probability for maintenance of desirable perennial species in areas adjacent to an established nonnative seeding and a watering source for livestock, increased incidence of weed seed dispersal, and periodic soil disturbance will be improved by seeding more grazing tolerant and competitive nonnative species as proposed.

3. Will nonnative plants stay on the site they are seeded and not significantly displace or interbreed with native plants?

Yes ☒ No ☐ Rationale: The proposed mix of nonnative plants are species that have not been shown to significantly displace or interbreed with native plants. Crested wheatgrass is present on adjacent rangeland without significant displacement or interbreeding with native plants. Habitat of a Bureau sensitive plant species is removed from sites where nonnative species are proposed for planting of greenstrips to reduce the flammability of vegetation adjacent to roads.

## Appendix 2.

### “Modified Cost - Risk Analysis”

<b>Treatment</b>	<b><u>Cost</u></b>
Revegetation .....	\$253,000.
Temporary Protective Fence.....	\$13,000.
Fence Reconstruction.....	\$1,000.
Soil/Watershed Structures .....	\$ -0-
All Other Costs (administrative, clearances, etc.)...	\$50,000.
<b>TOTAL</b>	<b>\$317,000.</b>

### Probability of Rehabilitation Treatments Successfully Meeting ESR Objectives

Treatments	Units	NA	%
Revegetation	3,334 acres		80
Native Drill Seeding	1,800 acres		70
Nonnative Drill Seeding	360 acres		80
Aerial Seeding	3,000 acres		50
Planting Seedlings	400 acres		85
Other		X	
Protective Fence to Exclude Grazing	2.5 miles		85
Fence Repair to Exclude Grazing	1 mile		95
Soil/Watershed Structures		X	
Retention dams/structures		X	
Ripping, contour furrows, etc.		X	
Matting, watersheds cover, etc.		X	
Other-Clean culverts		X	



**Risk of Resource Value Loss or Damage**

Identify the risk (high, medium, low, none or not applicable (NA)) of unacceptable impacts or loss of resources.

**No Action - Treatments Not Implemented (check one)**

Resource Value	NA	None	Low	Mid	High
Unacceptable Loss of Topsoil				X	
Weed Invasion					X
Unacceptable Loss of Vegetation Diversity					X
Unacceptable Loss of Vegetation Structure					X
Unacceptable Disruption of Ecological Processes				X	
Off-site Sediment Damage to Private Property				X	
Off-site Threats to Human Life		X			
Other - Loss Roads/Ways			X		

**Proposed Action - Treatments Successfully Implemented (check one)**

Resource Value	NA	None	Low	Mid	High
Unacceptable Loss of Topsoil			X		
Weed Invasion			X		
Unacceptable Loss of Vegetation Diversity			X		
Unacceptable Loss of Vegetation Structure			X		
Unacceptable Disruption of Ecological Processes			X		
Off-site Sediment Damage to Private Property			X		
Off-site Threats to Human Life		X			
Other - Loss Roads/Ways			X		

## SUMMARY

The costs of the project and probability of success of the proposed treatments are compared with the risks to resource values if: 1) no action is taken, and 2) the proposed action is successfully implemented. Alternatives may be included in this analysis to assist in the selection of the treatments that will cost effectively achieve the ESR objectives. Answer the following questions to determine which proposed ESR treatments should be selected and implemented.

1. Are the risks to natural resources and private property **acceptable** as a result of the fire if the following actions are taken?

**Native Seeding Alternative** Yes ☒ No ☐ Rationale for answer: The threat of weed invasion will be reduced with successful seeding of native and planting as identified. Also, the potential for soil erosion will be reduced in addition to a moderate reduction in the threat of repeated large wildfire. The proposed action will result in more diverse perennial vegetation communities that will meet wildlife needs and rangeland health standards. Seeding and minimal fence repair costs are acceptable considering anticipated diverse communities with use of the identified seed mixture and current forage demand for livestock and wildlife. Land use plan objectives will be moderately met with implementation of the proposed action.

**Nonnative Seeding Alternative** Yes ☒ No ☐ Rationale for answer: The threat of weed invasion will be greatly reduced with a successful seeding. Also, the potential for soil erosion will be reduced. The threat of repeated wildfire will be reduced with perennial vegetation that will moderately meet wildlife needs and rangeland health standards. Seeding of nonnative species would limit success meeting land use plan objectives for wildlife habitat and vegetation diversity, when one considers the acreage of additional nonnative seeding in the vicinity of the burned area and potential competition with special status plant species. Seeding, temporary fencing, and minimal fence repair costs are acceptable, considering seed mixtures and forage demand for livestock and wildlife.

**Limited Rehabilitation Alternative** Yes ☐ No ☒ Rationale for answer: The limited rehabilitation alternative would not reduce the threat of weed invasion, erosion, and repeated wildfire. Wildlife habitat objectives and Rangeland Health Standards would not be met in areas supporting a moderate to heavy component of annual weedy species.

**No Action** Yes ☐ No ☒ Rationale for answer: The threat of weed invasion, erosion, and repeated wildfire will be increased without treatment. Wildlife habitat objectives and Rangeland Health Standards will not be met.

**Proposed Action** Yes ☒ No ☐ Rationale for answer: The threat of weed invasion will be reduced with successful seeding of native and nonnative species and planting as identified. Also, the potential for soil erosion will be reduced as will the threat of repeated large wildfire. The proposed action will result in more diverse perennial vegetation communities that will meet wildlife needs and rangeland health standards. Seeding, temporary fencing, and minimal fence repair costs are preferred considering anticipated diverse communities with use of identified seed mixtures and current forage demand for livestock and wildlife. Land use plan objectives will be best met with implementation of the proposed action.

2. Is there probability of success of the proposed action, alternatives or no action acceptable given their costs?

**Native Seeding Alternative** Yes ☒ No ☐ Rationale for answer: Recent seedings of native species mixes on adjacent areas on similar soils and precipitation regimes have been successful under normal climatic conditions and protection from grazing for 2-3 growing seasons. In areas of heavy annual species competition, lower rates of success are anticipated. Protection of burned areas from livestock grazing damage utilizing existing fences with needed repairs of impacts from fire have proved to be moderately to highly successful and limit unacceptable impacts to one special status plant species.

**Nonnative Seeding Alternative** Yes ☒ No ☐ Rationale for answer: Recent seedings of nonnative species mixes on adjacent areas on similar soils and precipitation regimes have been successful under normal climatic conditions and protection from grazing for 2-3 growing seasons. Protection of burned areas from livestock grazing damage utilizing existing fences with needed repairs of impacts from fire and temporary fencing to limit areas temporarily removed from forage production have proved to be moderately successful and limit unacceptable impacts to one special status plant species.

**Limited Rehabilitation Alternative** Yes ☐ No ☒ Rationale for answer: Adjacent areas with similar soils and vegetation that have not been seeded following fire or brush control have become monocultures of annual species that do not meet wildlife habitat and Rangeland Health needs. Failing to seed select portions of the burned area to adapted perennial species would result in similar unacceptable annual species dominance. Protection of burned areas from livestock grazing damage utilizing existing fences with needed repairs of impacts from fire have proved to be moderately to highly successful and limit unacceptable impacts to one special status plant species.

**No Action** Yes ☐ No ☒ Rationale for answer: Adjacent areas with similar soils and vegetation that have not been seeded following fire or brush control have become monocultures of annual species that do not meet wildlife and Rangeland Health needs. Fuel loading with fine fuels would increase, resulting in the potential for more rapid fire spread in the future. Failing to seed the burned area to adapted perennial species would result in similar unacceptable vegetation and increase the potential for increased frequency of fire return to this site. Failure to protect burned areas from livestock grazing in the short term would result in additional decline

in diversity of native perennial species and allow unacceptable impacts to one special status plant species.

**Proposed Action** Yes ☒ No ☐ Rationale for answer: Recent seedings on adjacent areas on similar soils and precipitation regimes have been successful under normal climatic conditions and protection from grazing for 2-3 growing seasons. Sites previously dominated by Wyoming sagebrush and limited annual species in the understory, have been successfully seeded to similar native species mixes, while those areas previously dominated by annual vegetation and weedy species have been most successfully seeded to nonnative species.

3. Which approach will most cost-effectively and successfully attain the ESR objectives and therefore is recommended for implementation from a Cost/Risk Analysis standpoint?

Native Seeding Alternative ☐,

Nonnative Seeding Alternative ☐,

Limited Rehabilitation Alternative ☐,

No Action ☐,

Proposed Action ☒

Comments: The proposed action best meets the need for reducing weed invasion and repeated wildfire by providing less flammable breaks in vegetation communities while meeting land use plan objectives and providing for wildlife and rangeland health needs. Seeding of only native species would similarly meet rehabilitation objectives though would include some seeding areas of less than acceptable seeding success and have limited success in reducing fuels continuity. Seeding of nonnative perennial species would also similarly meet rehabilitation objectives in the event that native seed is not available in this year of high seed demand though would pose additional risk extending the size of existing nonnative seedings with limited diversity.